

# RESOLUTE MOBILE ACQUIRER

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**Abstract:** Cell phones are used to schedule appointments, fax, e-mail, call for assistance, report emergencies and keep in contact with loved ones and friends. It can also be used during crisis so as to alert the people close to us. If your lost phone happens to be a smartphone, there are multiple Apps that have been developed to get it back. Both iOS and Android have this feature of locating Mobile phones. Some of the Apps designed to serve this purpose are Device Manager (Android), Find my iPhone (iOS). But all these Apps require the mobile phones to be switched ON. These Apps fails to function when the Phone is switched OFF. Our paper primarily focuses on tracking a mobile phone even when it is switched OFF using the GSM and GPS.

**Keywords:** GPS, GSM, SMS, Real Time Clock (RTC).

## I INTRODUCTION:

Mobile Phones have become a vital tool for survival in today's fast paced world. Increase of business needs has resulted in a tremendous leap in the industry of technology to produce new models of communication such as Tab, Android, iOS and Windows Mobile and many more in order to customize the efficiency of business tracks. They are also an essential part of our personal lives. We have become so dependent on this gadget that we find it hard to survive without it. In case the mobile phone is lost or misplaced or stolen, we have to go and complain to authorities concerned. The developers do not provide an in-built feature to track the device once it is lost/Switched-off. This is an area which needs improvisation; and we have tried a solution which will be appealing and helpful to the mobile users.

## II.CONSTRUCTION:

In this module we use some of the components which are already present in a conventional mobile phone. In addition to that we mount few components to the rear end of the mobile and also we use a processor to do the required computations. Some of the components which will be used are:

## III GLOBAL SYSTEM FOR MOBILE (GSM):

It is a standard, established by the European Telecommunications Standards Institute for describing the protocols for second generation (2G) digital [3]cellular networks used by mobile phones. It was the default standard followed in over 219 countries [3] with a market share of more than 90%.

The network is structured into a number of discrete sections :

- Base station subsystem
- Network and switching subsystem
- GPRS core network
- Operations support system

These GSM networks operate over different range of frequencies with 2G operating in the 900 MHz or 1800MHz bands and 3G is being operated in 2100MHz frequency band. Irrespective of the selected frequency, it is divided into timeslots for individual phones.

## IV.REAL TIME CLOCK:

A real time clock is basically just like a watch- it runs on a battery and keeps time for any individual even when there is a power outage. Using an RTC, we can also keep track of long timeliness[1]. RTC has certain benefits:

- Low Power consumption.
- Reduces RAM usage.

## V GLOBAL POSITIONING SYSTEM (GPS):

It is a Space based Satellite navigation system created by the US Government which provides location and time information in all circumstances on earth where there is no proper line of sight to more than four GPS satellites.[4] It is widely used in military, civil and commercial domains. This system is based on time. The satellites have stable atomic clocks synchronized to each other and to those on the earth. Any deviation from the true time is corrected on a regular basis. Similarly, their positions are governed precisely.[4] GPS

receivers have clocks as well - however, they are not sync with current time, and fluctuating. The satellites continuously transmit their current time and position. A GPS receiver monitors multiple satellites and computes the exact position and time based on certain algorithm

We mount the RTC and its power source in the back of the phone and that power sources is used to activate the respective parts (GPS, GSM and PROCESSOR) of our phone. In addition to these, the user has to provide a back up mobile number, to which the location of the lost mobile will be sent as a SMS.

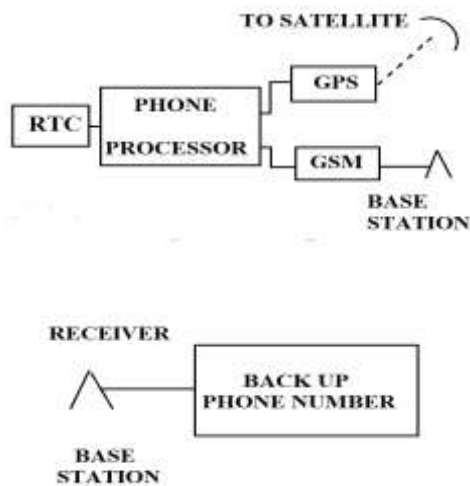


Fig 1. Block diagram of resolute mobile acquirer.

### VI WORKING:

Here, an external power sources, super capacitor, is used to power the RTC and act as an external power supply to the mobile phone. This power source is used to activate the required parts of mobile phone[5]. A super capacitor can be recharged and soldered.

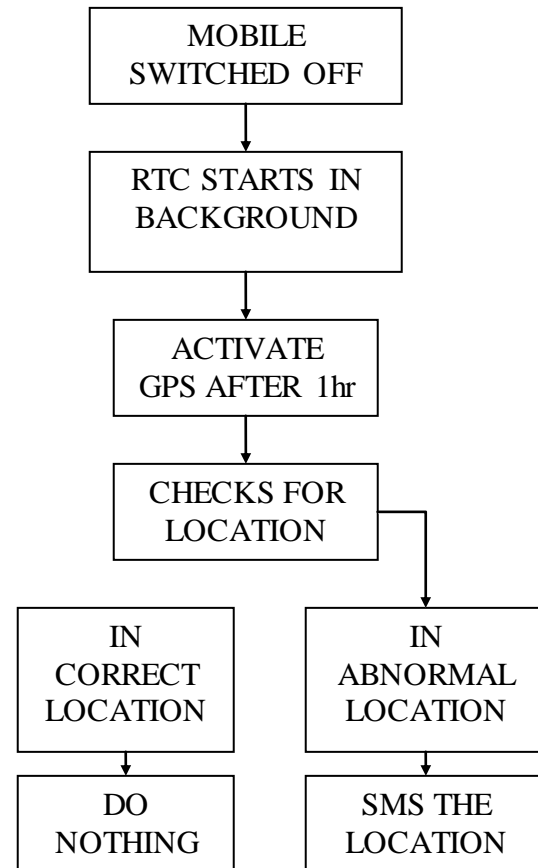


Fig 2. Working process of resolute mobile acquirer .

Once the mobile phone is switched off the real time clock starts ticking. After an hour, the processor activates the global positioning system module in the mobile phone. Now the processor checks for the location and sends it to the alternate mobile phone number which would have been provided by the user through a SMS. Now, the user is expected to reply[5]. The processor is programmed in such a way that if '1' is received it has to realise that the mobile phone has been stolen, and if it receives '0' it assumes that the mobile phone is in safe. If the user sends '1', the processor recognizes it and keeps transmitting the location to the user, so that the user can find his/her phone. This process is repeated for every one hour till the user gets back his phone and[5] the user is expected to reply 1 till he gets back his phone. Once the mobile phone is back with the user,

the user has to reply '00' to inform the processor that he has the phone.

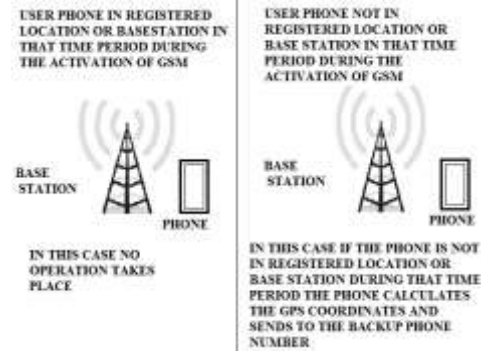


Fig 3. Working of resolute mobile acquirer.

## VII RELATED WORKS

The existing work shows that the smartphone is tracked by using the tracking app, which uses GPS technology, but in all these cases the smartphone must be in switch on condition and fail to track the phone when it get switched off



Fig 4. Diagram of the existing smartphone tracker.

In usual antitheft app, first we have to register for it by entering in the necessary details like device name, email id, after entering the app sends a conformation mail thus the registration process is over then after few minutes the mobile location is displayed on the google maps, so if lost we can track our mobile phones using google maps, but this whole process needs the mobile to be switched on an operational.

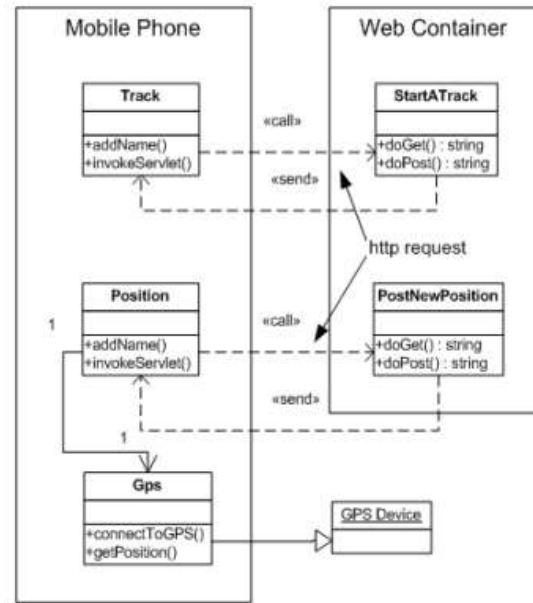


Fig 5. Architecture of mobile application which uses GPS.

## VIII PROPOSED WORK

In this, we plan to track the smartphones by using same GPS, GSM technologies even when the smartphone is switched off, with help of RTC powered by backup battery which activates the gsm and GPS which runs in background. Which help tracking the smartphone effectively.

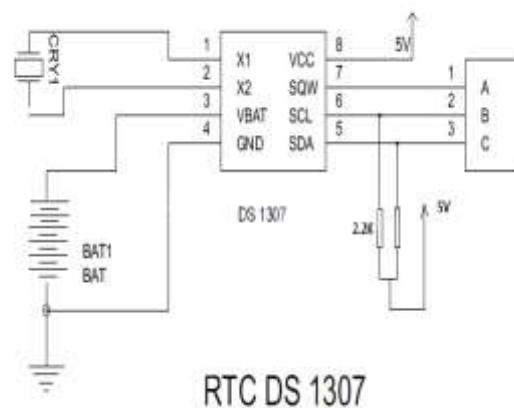


Fig 6. Circuit diagram of RTC, to be interfaced to the phone processor.

Table 1.timing and location table of the phone  
That gsm checks for each hour.

Fig.7. circuit diagram of the phone processor interfaced with GPS, GSM.

## IX RESULT

Mobile phones have become an essential tool for survival and life becomes difficult when one loses it. Thus, this paper's objective is to locate or track the device even when it is switched OFF. it is possible with help of gsm and GPS facility., If a phone is considered to be stolen or lost that phone when it get switched off will activate the Real Time Clock in background which will be run by a backup battery this RTC will count down for every one hour. This RTC activates the gsm facility in mobile and checks the location of the.

Mobile. it refers to table of timing of the location that phone might be if the phone finds out that it is in another gsm location for that particular time period it gets its gsm coordinates of the location of mobile and sends a message to a backup mobile number. As a result of this we needn't be dependent on any officials and we have the complete authority over our device.

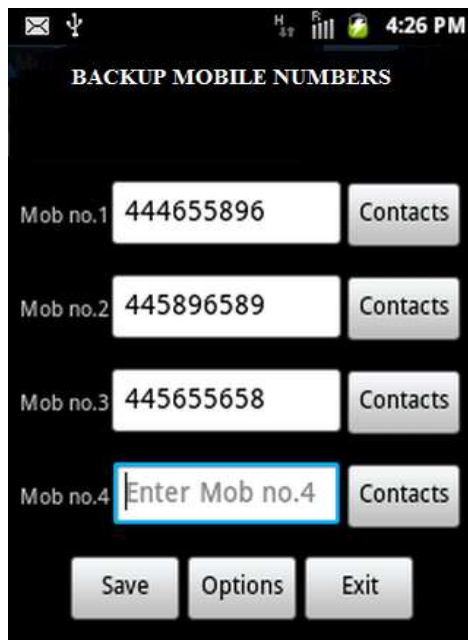


Fig 8. List of backup numbers to which the GPS coordinates of the phone is sent.

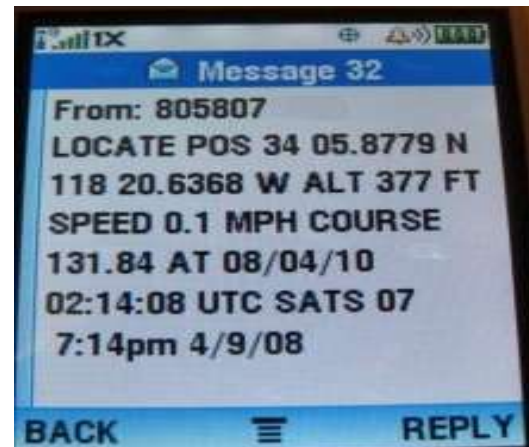


Fig 9. Shows the received GPS coordinates of the mobile to the backup mobile number.

By using the GPS coordinates sent from the lost or stolen mobile phone to backup mobile number, we can use those coordinates to track our mobile phones easily.

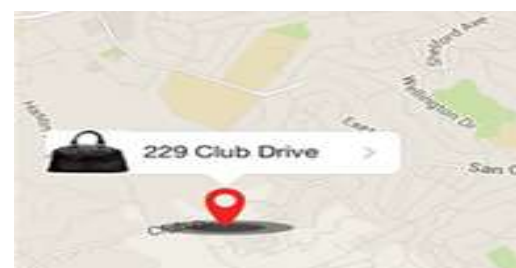


Fig 10. The location of the stolen mobile phone found using GPS coordinates.

## X DISCUSSION

The amount of smartphone theft had increased in recent days and there had been many phone tracking facility and apps in stores but these apps fail to work when they switch off the phone, in this we plan to track our smartphone even when it get switched off by the thief in background without his knowledge which helps us in tracking our smartphone efficiently

## IX REFERENCE:

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4. <http://www.gps.gov/>[4]
- 5.<https://www.google.co.in/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=intel%20phone%20processor>[5].